RE: 12-20 Memo from Tech Team to Managers

TARNOW Karen E to: Sanders, Dawn, Kristine Koch, Scheffler, Linda, Andy Koulermos, Laura Jones, Carl Stivers 12/21/2006 02:41 PM

This is helpful, I get your drift.

My two cents on the matter - which is more of a general comment then specific to this discussion - is that we probably don't need to worry a whole lot about the statistical significance of the data at this point. Given the variable nature of storm events, the limited number of samples, the limited season of sampling, site variability, etc., etc. I expect we're going to get a data set that, with possibly a few exceptions for high priority sites, is a huge smear (that's a statistical term, right?) and we won't be able to distinguish one land use from another with any kind of statistical validity. Maybe after we get this data and run the models to figure out what it means, we'll be a position to start talking about what kind of statistical significance we need and how we get it. But I'm not a statistician, and I don't even play one on TV, so I'm just operating on a hunch.

And I was hoping to spark a flood of emails debating this topic so that those of us that are working over the lonely holiday week have something to do with our time. NOT!

Actually, this topic brings me back around to the fact that we have not pinned down how we will be using this data in the models to obtain F&T information. So I will work on setting up a time for us to meet with Bruce Hope to work this through.
>>I'm looking at Jan 16-19. Let me know if you have any black out days.
Thanks

Ho ho ho!
karen

-----Original Message-----
From: Sanders, Dawn [mailto:DAWNS@BES.CI.PORTLAND.OR.US]
Sent: Thursday, December 21, 2006 1:11 PM
To: TARNOW Karen E; koch.kristine@epa.gov; Scheffler,

Linda; Andy
Koulermos; Laura Jones; Carl Stivers
Subject: RE: 12-20 Memo from Tech Team to Managers

I've had a chance to talk further with some of our stormwater folks and think I can better articulate my concern about the proposed change in approach to sampling at end of outfalls in mixed use basins.

The major objective for sampling is to get data that will allow us to estimate Harbor-wide loading to the river. Since sampling at every outfall (with enough samples to have some confidence to estimate loading) is cost and time prohibitive, we agreed on a land-use-based approach.

The sampling was geared towards collecting data to develop land use loading rates for each type of land use category. The number of sample locations for each category was influenced by the variability in contaminant type and concentrations expected and, to a lesser degree, the areal coverage of the land use in the Study area. Therefore, areas with higher expected variability would be sampled at a higher frequency so that the average of all the loading rate within a category more closely approximated a true average. At a minimum, we will have 9 heavy industrial sites sampled 3 times each, which gives us a sample size of 27. This assumes that unique sites aren't used for developing a land use average, which if they are, would make this data set (and the resulting average) more robust.

One Monday, the tech team discussed sampling at the end of outfalls with a mix of land use categories, with the rationale that collecting data directly is better than modeling these basins. This essentially means we are developing a basin-specific loading rate. But these outfalls would only be sampled 3 times, which, given the expected variability in stormwater quality, would provide a highly inaccurate basin specific loading rate. Larger basins typically have higher variability because,

depending on the duration and intensity of the storm, contaminants are
mobilized differentially in different portions of the basins. Therefore,
a higher sampling frequency is needed to estimate an average than is
required from a smaller basin.

Trying to estimate total loading with data sets of very different data
quality would greatly increase the overall error and is technically
invalid. To develop a basin-specific loading rate for sites with mixed
land use categories and lots of heavy industrial uses would require a
data set roughly comparable to the industrial land use data set:
therefore, we should sample these outfalls about 27 times. Obviously,
that is not feasible.

The above discussion is relevant to 2 of the 3 City sampling locations
that were changed. M-1 is primarily light industrial, although one
might expect to see slightly higher concentrations because it has a
manufacturing facility (Freightliner). But there are 3 other light
industrial land use stations and so it may not significantly change the
average. If we keep this location, I would propose to move it to a land
use station to strengthen our light industrial loading rate average.

-----Original Message-----
From: TARNOW Karen E [
mailto:TARNOW.Karen@deq.state.or.us]
Sent: Wednesday, December 20, 2006 10:37 AM
To: Valerie Oster
Cc: koch.kristine@epa.gov; Sanders, Dawn; Scheffler, Linda; Andy
Koulermos; Carl Stivers; Laura Jones; TARNOW Karen E
Subject: RE: 12-20 Memo from Tech Team to Managers

Here it is.

-----Original Message-----
From: Valerie Oster [mailto:voster@anchorenv.com]
Sent: Wednesday, December 20, 2006 10:16 AM
To: TARNOW Karen E
Subject: RE: 12-20 Memo from Tech Team to Managers

Thanks Karen -

Is there a final list of recommended sites? Could you send this to me?

Valerie Thompson Oster
Anchor Environmental, L.L.C
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Phone: 503-670-1108 x19
Fax: 503-670-1128

From: TARNOW Karen E [mailto:TARNOW.Karen@deq.state.or.us]
Sent: Wed 12/20/2006 10:07 AM
To: Valerie Oster
Subject: 12-20 Memo from Tech Team to Managers

Val - Please distribute this to the managers. Thanks

In addition, here's an update on the FSP. Carl Stivers is working on the first draft of the FSP and plans to have the it ready by early January for the Tech Team to review.

<<12-20 Memo to PH Managers.doc>>

Karen Tarnow
Oregon DEQ
Portland Harbor Storm Water Coordinator
503-229-5988